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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,282	01/02/2004	Victor Il'ich Kopp	1014-7CIP	2387

7590

12/08/2005

Edward Etkin, Esq.  
Suite 3C  
4804 Bedford Avenue  
Brooklyn, NY 11235

EXAMINER
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VANNUCCI, JAMES

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 12/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

**Office Action Summary**

Application No.

10/751,282

Applicant(s)

KOPP ET AL.

Examiner

Jim Vannucci

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-9, 12-14 and 19-21 is/are allowed.
- 6) ☒ Claim(s) 10, 11 and 15-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 10-11 and 15-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Kopp et al.(6,404,789)

The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Claim 10, figure 1A discloses a feedback structure(10) of a thickness T and of an average refractive index N having a top surface(14) and a bottom surface(16) configured to produce a photonic mode of a predetermined frequency(col. 6, lines 28-32) separated from a nearest lower frequency photonic mode given by the recited expression(fig. 2A), and a source(22) for emitting electromagnetic radiation at the

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predetermined frequency within a cone that is generally perpendicular to the feedback structure through the feedback structure where the feedback structure only transmits electromagnetic radiation of the predetermined frequency(fig. 2A) and having a wave vector substantially normal thereto, such that the electromagnetic radiation is passively spatially filtered as it passes through the feedback structure(fig. 2B).

Claims 11, 16 and 18, figure 2A discloses photonic modes that are a defect mode and high frequency band edge modes.

Claim 15, a refractive index variation is disclosed between top and bottom surfaces(col. 6, lines 22-24), and exciting the light-emitting medium to produce the optical gain of a predetermined gain magnitude in the feedback structure sufficient to at least meet the lasing threshold such that coherent wide-area laser emission occurs at the predetermined frequency perpendicular to at least one of the top and bottom surfaces, wherein the wide-area laser emission remains coherent when the predetermined gain magnitude is selectively increased above the lasing threshold(col. 5, lines 11-15; and fig. 2A).

Claim 17, figure 3B discloses electromagnetic radiation that is spatially filtered as it passes through the feedback structure.

***Allowable Subject Matter***

3. Claims 1-9, 12-14 and 19-21 are allowed.

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4. The following is a statement of reasons for the indication of allowable subject matter. The following limitations are primarily responsible for distinguishing these claims over the prior art.

Regarding claims 1-9 and 21, the limitations concerning a variable excitation means connected to the feedback structure for exciting the light-emitting medium to produce optical gain of a predetermined gain magnitude in the feedback structure sufficient to at least meet the lasing threshold to cause coherent wide-area laser emission to occur at the predetermined frequency perpendicular to at least one of the top and bottom surfaces so that the wide-area laser emission remains coherent when the predetermined gain magnitude is selectively increased above the lasing threshold as recited in claim 1; and regarding claims 12-14 and 19-20, the limitations concerning a variable excitation means connected to the feedback structure for applying gain of a selected magnitude to the feedback structure to thereby externally control a coherence area of the emerging beam, wherein the gain a) ranges from a lower gain to a higher gain, b) is below a lasing threshold, and c) is sufficient to provide amplification for the emitted electromagnetic radiation at the predetermined frequency such that when the gain is changed between the lower gain and the higher gain, the electromagnetic radiation emitted from the second surface is amplified and changed in coherence area corresponding to the change in the gain as recited in claims 12 and 19.

### ***Correspondence***

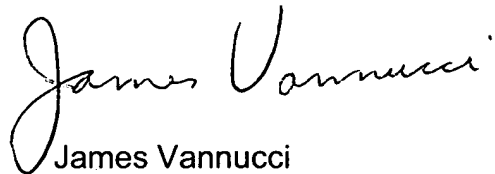
5. Any inquiry concerning this communication or earlier communications from the

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examiner should be directed to Examiner Jim Vannucci whose phone number is (571) 272-1820.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center whose telephone number is (703) 308-0956.

Papers related to Technology Center 2800 applications only may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is (571) 273-8300.



James Vannucci